

Grade Specification Sheet

TCHP Grade: NL-3-2

Powder Type: Thermal Spray (HVOF)

Powder Composition:

Titanium Carbonitride:	7.0 - 8.0	wt%
Tungsten Carbide:	81.0 - 84.0	wt%
Cobalt:	9.5 - 10.5	wt%

Powder Properties:

Bulk Density (ASTM B329):	2.75 - 3.25	g/cm ³
Particle Size:	20 - 53	µm

Typical Sintered Properties:

Density (As deposited):	12.4 - 12.5	g/cm ³
Microhardness (cross-section)	1100 to 1300	HV ₃₀₀

Grade Attributes: : The uniform microstructure of this material is created through encapsulation of fine Al₂O₃ particles into a WC shell, and subsequent Co Shell. Processing this powder into sintered parts or thermally applied coatings based on these chemically inert core particles creates a thermally insulating material which retains exceptional hardness and toughness at elevated working temperatures.

